WHAT IS CLAIMED IS:

1. A communication node, comprising:

a first network interface for a first network in which data transfer is based on a combination of request and response;

a second network interface for a second network in which data transfer is not based on a combination of request and response;

a packet conversion processing unit configured to apply a packet conversion processing to a first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a packet correspondence memory unit configured to store a correspondence between the first packet and the second packet; and

a destination node identification unit configured to identify a destination node on the first network to which a response packet is to be transferred, by referring to the packet correspondence memory unit using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface.

2. The communication node of claim 1, further comprising:

a constituent element notification unit configured to notify at least a part of constituent elements of each node existing on one of the first and second networks as constituent elements of the communication node to another one of the first and second networks.

3. The communication node of claim 1, wherein the packet correspondence memory unit stores the correspondence

between the first packet and the second packet in terms of a first transaction ID on the first network of a message to be transferred by the first and second packets and a second transaction ID on the second network of the message given by a combination of a destination terminal ID and a destination constituent element ID on the second network of the message.

4. The communication node of claim 1, further comprising:

a sequence number attaching unit configured to attach a sequence number to the second packet at a time of obtaining the second packet at the packet conversion processing unit; and

a sequence number memory unit configured to store the sequence number attached to each packet transmitted from the communication node to the second network.

5. The communication node of claim 1, wherein the communication node executes both a first processing for transferring packets received from the first network to the second network and a second processing for transferring packets received from the second network to the first network.

6. The communication node of claim 5, wherein the communication node executes the first processing and the second processing by mutually different processing schemes.

7. The communication node of claim 1, wherein the first network is an IEEE 1394 bus.

8. The communication node of claim 1, wherein the second network is an IEEE 802.11 network.

9. The communication node of claim 1, wherein the first

packet and the second packet are packets for transferring an AV/C command of an AV/C protocol, and the response packet is a packet for transferring an AV/C response of the AV/C protocol.

10. A communication node, comprising:

a first network interface for a first network in which data transfer is based on a combination of request and response;

a second network interface for a second network in which data transfer is not based on a combination of request and response;

a packet conversion processing unit configured to apply a packet conversion processing to a first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a packet information memory unit configured to store an information on each second packet transmitted from the communication node; and

a packet transmission control unit configured to serialize transmission of a plurality of second packets to the second network by referring to the packet information memory unit such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response packet corresponding to said one second packet is received from the second network.

11. The communication node of claim 10, further comprising:

a constituent element notification unit configured to notify at least a part of constituent elements of each node existing on one of the first and second networks as

constituent elements of the communication node to another one of the first and second networks.

12. The communication node of claim 10, wherein the packet transmission control unit serializes the plurality of second packets with respect to the second network as a whole, each node on the second network, each constituent element on the second network, or each node on the first network.

13. The communication node of claim 10, wherein the packet transmission control unit deletes the information on said one second packet stored in the packet information memory unit upon receiving the response packet corresponding to said one second packet, and transmits the next second packet when the information on said one second packet is absent in the packet information memory unit.

14. The communication node of claim 10, further comprising:

a time out processing unit configured to be activated at a time of transmitting each second packet, and deleting the information on each second packet stored in the packet information memory unit after a prescribed period of time elapsed.

15. The communication node of claim 14, wherein the prescribed period of time is set according to a type of the application executed across the first and second networks.

16. The communication node of claim 10, wherein the communication node executes both a first processing for transferring packets received from the first network to the second network and a second processing for transferring packets received from the second network to the first

network.

17. The communication node of claim 16, wherein the communication node executes the first processing and the second processing by mutually different processing schemes.

18. The communication node of claim 10, wherein the first network is an IEEE 1394 bus.

19. The communication node of claim 10, wherein the second network is an IEEE 802.11 network.

20. The communication node of claim 10, wherein the first packet and the second packet are packets for transferring an AV/C command of an AV/C protocol, and the response packet is a packet for transferring an AV/C response of the AV/C protocol.

21. A communication node, comprising:

a first network interface for a first network in which data transfer is based on a combination of request and response;

a second network interface for a second network in which data transfer is not based on a combination of request and response;

a packet conversion processing unit configured to apply a packet conversion processing to a first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a packet correspondence memory unit configured to store a correspondence between the first packet and the second packet;

a destination node identification unit configured to

identify a destination node on the first network to which a response packet is to be transferred, by referring to the packet correspondence memory unit using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface;

a packet information memory unit configured to store an information on each second packet transmitted from the communication node;

a packet transmission control unit configured to serialize transmission of a plurality of second packets to the second network by referring to the packet information memory unit such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response packet corresponding to said one second packet is received from the second network; and

a node processing determining unit configured to determine a processing to be executed by the communication node as either a first processing using a combination of the packet correspondence memory unit and the destination node identification unit or a second processing using a combination of the packet information memory unit and the packet transmission control unit, according to a type of the first packet.

22. The communication node of claim 21, further comprising:

a constituent element notification unit configured to notify at least a part of constituent elements of each node existing on one of the first and second networks as constituent elements of the communication node to another one of the first and second networks.

23. The communication node of claim 21, wherein the packet

transmission control unit deletes the information on said one second packet stored in the packet information memory unit upon receiving the response packet corresponding to said one second packet, and transmits the next second packet when the information on said one second packet is absent in the packet information memory unit.

24. The communication node of claim 21, further comprising:

a time out processing unit configured to be activated at a time of transmitting each second packet, and deleting the information on each second packet stored in the packet information memory unit after a prescribed period of time elapsed.

25. The communication node of claim 24, wherein the prescribed period of time is set according to a type of the application executed across the first and second networks.

26. The communication node of claim 21, wherein the communication node executes both a first processing for transferring packets received from the first network to the second network and a second processing for transferring packets received from the second network to the first network.

27. The communication node of claim 26, wherein the communication node executes the first processing and the second processing by mutually different processing schemes.

28. The communication node of claim 21, wherein the first network is an IEEE 1394 bus.

29. The communication node of claim 21, wherein the second network is an IEEE 802.11 network.

30. The communication node of claim 21, wherein the first packet and the second packet are packets for transferring an AV/C command of an AV/C protocol, and the response packet is a packet for transferring an AV/C response of the AV/C protocol.

31. A computer usable medium having computer readable program codes embodied therein for causing a computer to function as a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the computer readable program codes include:

a first computer readable program code for causing said computer to apply a packet conversion processing to a first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a second computer readable program code for causing said computer to store a correspondence between the first packet and the second packet in a packet correspondence memory; and

a third computer readable program code for causing said computer to identify a destination node on the first network to which a response packet is to be transferred, by referring to the packet correspondence memory using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface.

32. A computer usable medium having computer readable program codes embodied therein for causing a computer to

function as a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the computer readable program codes include:

a first computer readable program code for causing said computer to apply a packet conversion processing to a first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a second computer readable program code for causing said computer to store an information on each second packet transmitted from the communication node in a packet information memory; and

a third computer readable program code for causing said computer to serialize transmission of a plurality of second packets to the second network by referring to the packet information memory such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response packet corresponding to said one second packet is received from the second network.

33. A computer usable medium having computer readable program codes embodied therein for causing a computer to function as a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the computer readable program codes include:

a first computer readable program code for causing said computer to apply a packet conversion processing to a

first packet received by the first interface and obtain a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

a second computer readable program code for causing said computer to store a correspondence between the first packet and the second packet in a packet correspondence memory;

a third computer readable program code for causing said computer to identify a destination node on the first network to which a response packet is to be transferred, by referring to the second computer readable program code using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface;

a fourth computer readable program code for causing said computer to store an information on each second packet transmitted from the communication node in a packet information memory;

a fifth computer readable program code for causing said computer to serialize transmission of a plurality of second packets to the second network by referring to the fourth computer readable program code such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response packet corresponding to said one second packet is received from the second network; and

a sixth computer readable program code for causing said computer to determine a processing to be executed by the communication node as either a first processing using a combination of the packet correspondence memory and the third computer readable program code or a second processing using a combination of the packet information memory and the fifth computer readable program code, according to a type of the first packet.

34. A method for controlling a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the method comprising:

applying a packet conversion processing to a first packet received by the first interface and obtaining a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

storing a correspondence between the first packet and the second packet in a packet correspondence memory; and

identifying a destination node on the first network to which a response packet is to be transferred, by referring to the packet correspondence memory using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface.

35. A method for controlling a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the method comprising:

applying a packet conversion processing to a first packet received by the first interface and obtaining a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

storing an information on each second packet transmitted from the communication node in a packet information memory; and

serializing transmission of a plurality of second packets to the second network by referring to the packet information memory such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response packet corresponding to said one second packet is received from the second network.

36. A method for controlling a communication node having a first network interface for a first network in which data transfer is based on a combination of request and response and a second network interface for a second network in which data transfer is not based on a combination of request and response, the method comprising:

applying a packet conversion processing to a first packet received by the first interface and obtaining a second packet corresponding to the second network at a time of executing an application across the first network and the second network;

storing a correspondence between the first packet and the second packet in a packet correspondence memory;

identifying a destination node on the first network to which a response packet is to be transferred, by referring to the packet correspondence memory using an information of the response packet at a time of receiving the response packet corresponding to the second packet by the second interface;

storing an information on each second packet transmitted from the communication node in a packet information memory;

serializing transmission of a plurality of second packets to the second network by referring to the packet information memory such that after one second packet is transmitted to the second network, a next second packet is not transmitted to the second network until a response

packet corresponding to said one second packet is received from the second network; and

determining a processing to be executed by the communication node as either a first processing using a combination of the packet correspondence memory and the identifying step or a second processing using a combination of the packet information memory and the serializing step, according to a type of the first packet.